



U.S. Department
of Transportation

**Research and
Special Programs
Administration**

400 Seventh Street, S.W.
Washington, D.C. 20590

OCT 4 1995

Cass R. Chappell, Section Leader
Cask Certification Section
Storage and Transport Systems Branch
Division of Industrial and
Medical Nuclear Safety, NMSS
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Dear Mr. Chappell:

In accordance with the Memorandum of Understanding between our Agencies, I am requesting that you review the enclosed Japanese Certificate of Competent Authority J/79/AF-85, Revision 1 for the Model BU-J package and make a recommendation about our revalidation of the certificate for import and export shipments.

In order that our applicant can plan shipments using the Model BU-J package, I request you provide an estimated completion date for your review and recommendation. Thank you for your assistance and please feel free to contact me if you need any further information.

Sincerely,

Richard W. Boyle, Chief
Radioactive Materials Branch
Office of Hazardous Materials
Technology

Enclosure

200000
9510230232 951004
PDR MISC
9510230232 PDR

NT0111



Special Agent in Charge
U.S. Customs Service
Washington, D.C. 20541

September 27, 1995

Associate Administrator for Hazardous Materials Safety
U.S. Department of Transportation
Washington, D.C. 20590

Attention: Mr. R. W. Boyle, Chief
Radioactive Materials Branch
Office of Hazardous Materials Technology
Research and Special Programs Administration

Dear Sir:

Subject: US DOT Certificate USA/0220/AF-85

General Electric hereby requests that the subject DOT Certificate be revised to include reference to Japan's latest STA Certificate (J/79/AF-85 (Rev.1)) for the BU-J package and to extend the DOT Certificate's expiration date to August 8, 1998. There have been no changes in the container, no increase of enrichment or payload, nor any change in the basis of safety for the container since the last certification and validation. The specific changes in the language of the Japanese STA Certificate are summarized in Attachment #1.

Enclosed as Attachment #2 is the English translation of STA Certificate J/79/AF-85 (Rev. 1) including a sketch of the package.

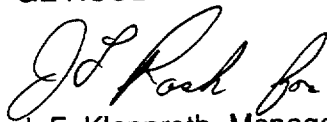
Approval is requested by November 13, 1995, in order to meet our contractual commitments for international shipments:

Three (3) copies of this submittal are being provided to facilitate the review.

Please contact me on (910) 675-5608 if you have any questions regarding this application.

Sincerely,

GE NUCLEAR ENERGY


J. F. Klapproth, Manager
Fuels and Facility Licensing

/zb
attachments

cc: JFK-95-082

ATTACHMENT #1

EDITORIAL AND ADMINISTRATIVE CHANGES

The following editorial and administrative changes were incorporated in J/79/AF-85 (Rev.1):

1. The "(Rev.1)" was added to the Japanese identification mark J/75/AF-85 designating the first revision since it was licensed to the IAEA Safety Series No. 6, 1985 Edition.
2. Section 2. (1) (iii), Isotopic Content, incorporates the radiometric purity requirements for commercial uranium and makes them a condition of transport in the package.
3. Section 2. (2) (ii), Total Activity, places limits on the total radioactivity for the contents of the package.
4. Section 4., Assumed Ambient Conditions, incorporated the IAEA 1985 assumed ambient conditions from paragraph 545 and Isolation Data from Table XII.
5. Section 6., Special Features in the Criticality Assessment. The words "outer container" and "inner container" were changed to "cylinder" in the current translation. There is no change from the original safety basis.
6. Section 7., Provides a statement that all evaluations are based on the characteristics of fresh fuel.
7. Section 10., The new issue and expiration dates are provided.

Mr. R. W. Boyle
September 27, 1995

ATTACHMENT #2

ENGLISH TRANSLATION OF STA CERTIFICATE J/79/AF-85 (REV. 1)

7 安局（核規）第 2 8 号

平 成 7 年 9 月 4 日

日本ニュークリア・フュエル株式会社

取締役社長 荒井 利治 殿

科学技術庁原子力安全局長

宮 林 正



核燃料輸送物設計承認英文証明について

平成 7 年 8 月 2 8 日 付け B S G - T 9 5 - 1 3 3 を も っ て 申 請 の あ っ た 標 記 の 件
に つ い て は 、 申 請 の と お り 交 付 し ま す 。

IDENTIFICATION MARK

J79/AF-85(Rev.1)

COMPETENT AUTHORITY
OF
JAPAN

CERTIFICATE OF APPROVAL OF
PACKAGE DESIGN
FOR THE TRANSPORT OF
RADIOACTIVE MATERIALS

ISSUED BY

SCIENCE AND TECHNOLOGY AGENCY
2-2-1, KASUMIGASEKI, CHIYODA-KU
TOKYO, JAPAN

SCIENCE AND TECHNOLOGY AGENCY
PRIME MINISTER'S OFFICE

2-2-1 Kasumigaseki, Chiyoda-ku, Tokyo 100, JAPAN
Telephone: Tokyo (03) 3581-5271
Telex: 02226720 STASGDJ

科学技術庁

〒100 東京都千代田区霞が関2-2-1

Reference of J/79/AF-85(Rev.1)

Page 1 of 7 Pages

CERTIFICATE OF APPROVAL OF PACKAGE DESIGN
FOR THE TRANSPORT OF RADIOACTIVE MATERIALS

This is to certify, in response to the application by JAPAN NUCLEAR FUEL Co., Ltd. on November 21, 1994, that the design of package described herein satisfies the design requirements of type A fissile package specified in Regulations for the Safe Transport of Radioactive Material (International Atomic Energy Agency, Safety Series No.6, 1985 Edition).

COMPETENT AUTHORITY

IDENTIFICATION MARK : J/79/AF-85(Rev.1)

5 Sep. 1995
Date

for Katsuyo Watanabe
Masayasu Miyabayashi
Director General
Nuclear Safety Bureau
Science and Technology Agency
Competent Authority of Japan
for Transport Package Design
of Radioactive Materials

1. NAME OF PACKAGE : BU-J (Type A, Fissile)

2. SPECIFICATION OF CONTENT
 - (1) Description of Contents
 - (i) Material of Nuclear Fuel : Uranium Dioxide (Powder and Pellet)
 - (ii) Enrichment : 5.0% or less
 - (iii) Isotopic Content :

^{232}U	\leq	0.002	$\mu\text{g/g}^{235}\text{U}$
^{234}U	\leq	10,000	$\mu\text{g/g}^{235}\text{U}$
^{236}U	\leq	5,000	$\mu\text{g/g}^{235}\text{U}$
^{99}Tc	\leq	0.2	$\mu\text{g/g}^{235}\text{U}$
 - (2) Restriction of Contents
 - (i) Total Weight of Content : 90 kg or less
 - (ii) Total Activity : 6.60 GBq or less
 - (iii) Total Heat Generation Rate : Not applicable
 - (iv) Burnup Rate : Not applicable
 - (v) Cooling Time : Not applicable
 - (vi) Physical State : Solid (Powder and Pellet)
 - (vii) Maximum Contents per Package : See Attached Table

3. SPECIFICATION OF PACKAGING
 - (1) Total Weight of Packaging : 115 kg or less

 - (2) Outer Dimension of Packaging
 - (i) Outer Diameter : Approximately 61 cm
 - (ii) Height : Approximately 88 cm

(3) Materials of Packaging

(i) Inner Container

Inner Drum	: Steel (SPCC or SPHC)
Flange and Lid	: Steel (SS400)
Gasket	: Butyl Rubber
Bolts and Nuts	: Steel (SS400)

(ii) Outer Container

Outer Drum	: Steel (SPCC or SPHC)
Fastener	: Steel (SS400)
Gasket	: Natural Rubber
Heat Insulator	: Pealite-Alumina Cement
Bolts and Nuts	: Steel (SS400)

(4) Package Illustration : See Attached Figure

4. ASSUMED AMBIENT CONDITIONS

- | | |
|-------------------------|--|
| (i) Ambient Temperature | : 38 °C |
| (ii) Insolation Data | : Table X II of IAEA Regulation
(Safety Series No. 6, 1985 Edition) |

5. RESTRICTIONS OF TRANSPORT

- | | |
|---|------------------|
| (i) Restriction Number | : 500 Packages |
| (ii) Array | : No Restriction |
| (iii) Transport Index for Nuclear Criticality Control | : 0.1 |

6. SPECIAL FEATURES IN THE CRITICALITY ASSESSMENT

The subcriticality calculation is evaluated upon assumption that the cylinder is in immersion condition by water and no water leaks into the cylinder under the normal conditions and accident conditions in transport.

7. DECREASED NEUTRON MULTIPLICATION FACTOR

Any determination is not considered in the criticality assessment, because the subcriticality calculation is evaluated upon the condition of fresh nuclear fuels.

8. RESTRICTION ON THE MODES OF TRANSPORT

It is not confirmed that the design of package satisfies the additional requirements for packages transported by air.

9. INSTRUCTIONS ON USE AND MAINTENANCE OF PACKAGING

(1) Instructions on Maintenance of Packaging

The packaging shall be kept in good condition and required periodic inspections. Periodic inspections of each packaging shall be conducted more than once per year. (In case where a packaging is used for transport more than ten times per year, the periodic inspections shall be conducted at least once every ten transports.)

The periodic inspections shall include visual inspection for gaskets of each packaging and subcriticality inspection.

The packages or packaging shall be lifted with a forklift or crane.

(2) Actions prior to Shipment

Each package shall be checked for the following items before shipments.

- (i) Visual Inspection
- (ii) Lifting Inspection
- (iii) Weight Measurement

- (iv) Surface Contamination Measurement
- (v) Radiation Dose Rate Measurement
- (vi) Subcriticality Inspection
- (vii) Content Inspection

Gaskets of the packaging shall be inspected, and exchanged if necessary.

- (3) Precautions for Loading of Package for Transport

Loading of the package shall be performed such that the package will not move, roll down or fall down during transport.

10. THE ISSUE DATE AND EXPIRY DATE OF CERTIFICATE

- (1) Issue Date : August 8, 1995
- (2) Expiry Date : August 8, 1998

11. NOTE

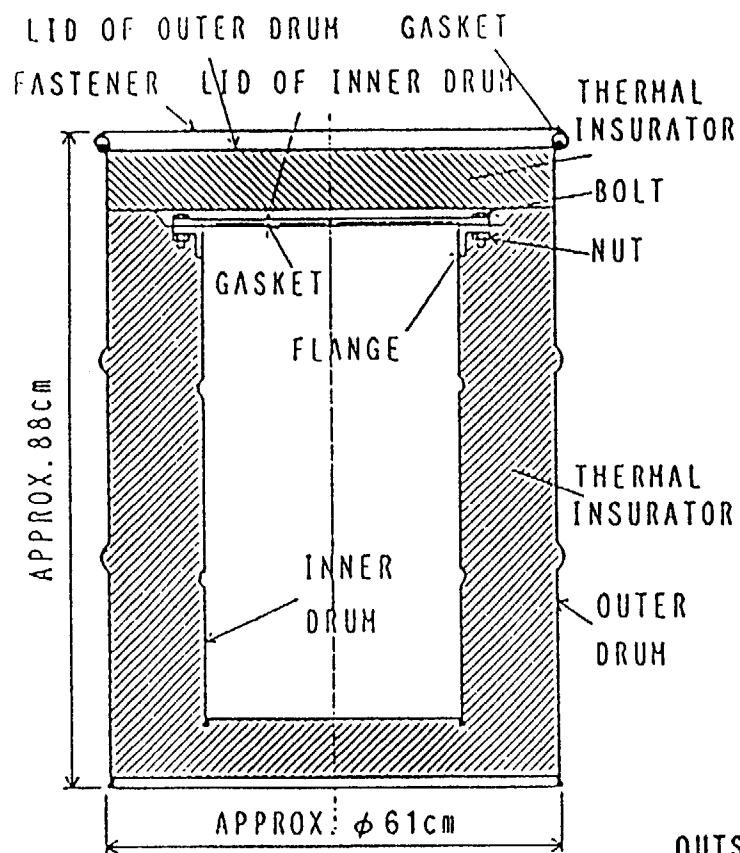
This certificate does not relieve the consignor from compliance with any requirement of the government of any country through or into which the package will be transported.

Attached Table

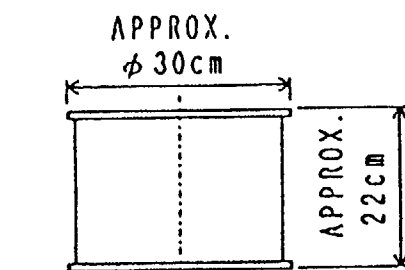
Maximum Contents per BU-J Package

Enrichment (%)	Maximum Qunatity of Material per Package (kg - UO_2)	
	<u>Pellet</u>	<u>Powder</u>
3.0 % or less	76.2	89.0
3.6 % or less	57.0	62.2
4.0 % or less	49.4	51.4
4.6 % or less	40.0	40.4
5.0 % or less	36.2	36.2

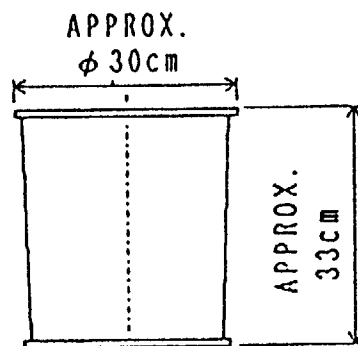
H/U ratio shall be confirmed equal or less than 0.45 prior to shipment.



CROSS SECTION

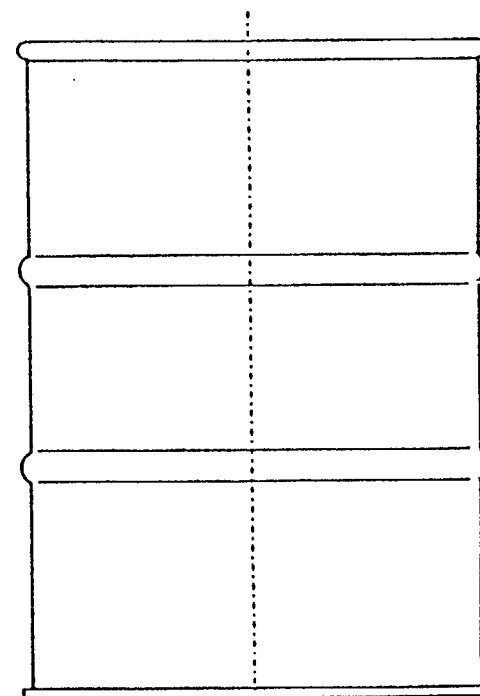


URANIUM OXIDE PAIL(1)



URANIUM OXIDE PAIL(2)

OUTSIDE VIEW OF URANIUM OXIDE PAIL



OUTSIDE VIEW

MATERIAL : STEEL
(THERMAL INSULATOR : PEARLITE-ALUMINA CEMENT)

OUTSIDE VIEW OF BU-J PACKAGE

Attached Figure